ABSTRACT OF THE DISCLOSURE

APPARATUS AND METHOD FOR CREATING INSTRUCTION GROUPS FOR EXPLICITLY PARALLEL ARCHITECTURES

5

An apparatus and method for creating instruction groups for explicitly parallel architectures is provided. The apparatus and method accept instruction groups as input and determine a number of each possible type of

10 instruction in the instruction group. Based on the number of each possible type of instruction in the instruction group, instruction bundling is performed such that the instructions in the instruction group are bundled into efficiently executed bundles. The

15 instruction bundling further accommodates intra-bundle stop bundles in the event that more efficient bundles are not possible. The instruction bundling is performed based on a most restrictive instruction type placement first and proceeds to less restrictive instruction type

20 placement.